

IN THE CLAIMS

The claims are as follows:

Claim 1 (Previously presented): A photovoltaic device, comprising a composition of carbon nanotubes and of at least one organic hole conductor, wherein the band gap of said carbon nanotubes lies in the range of from about 0.5 to about 1 eV.

Claim 2 (Previously presented): The device according to claim 1, further comprising:

- a first electrode on one side of said composition of carbon nanotubes and of at least one organic hole conductor, said first electrode having a first work function, and
- a second electrode on another side of said composition of carbon nanotubes and of at least one organic hole conductor, said second electrode having a higher work function than said first work function.

Claim 3 (Previously presented): The device according to claim 1, wherein said at least one organic hole conductor is a conjugated polymer or a blend of at least two conjugated polymers.

Claim 4 (Previously presented): The device according to claim 1, wherein said carbon nanotubes are a mixture of metallic and semiconducting carbon nanotubes.

Claim 5 (Previously presented): The device according to claim 1, wherein said carbon nanotubes are a mixture of multi-walled and single-walled carbon nanotubes.

Claim 6 (Previously presented): The device according to claim 1, wherein the carbon nanotubes have a diameter in the range of from 0.5 nm to 2 nm.

Claim 7 (Canceled).

Claim 8 (Previously presented): The device according to claim 1, wherein the band gap of said at least one hole conductor lies in the range of from about 1 eV to 3 eV.

Claim 9 (Previously presented): The device according to claim 1, wherein said hole conductor is selected from the group comprising semiconducting organic materials with a band gap above 1 eV and a π -orbital higher in energy than the highest occupied molecular orbital (HOMO) of said carbon nanotubes.

Claim 10 (Previously presented): The device according to claim 1, wherein said composition of carbon nanotubes and of at least one organic hole conductor comprises a mixture of carbon nanotubes and at least one hole conductor.

Claim 11 (Previously presented): The device according to claim 1, wherein said composition is a two-layer-system, wherein said at least one organic hole conductor is in one layer and said carbon nanotubes are in another layer.

Claim 12 (Previously presented): The device according to claim 1, wherein said composition is a multiple-layer-system, wherein said at least one organic hole conductor and said carbon nanotubes are in alternating layers.

Claim 13 (Previously presented): The device according to claim 2, wherein said carbon nanotubes are vertical with respect to one of the electrodes.

Claims 14 (Canceled).

15 (Withdrawn): The device according to claim 2, wherein said carbon nanotubes have been horizontally aligned.

Claim 16 (Previously presented): The device according to claim 1, wherein said at least one organic hole conductor is selected from the group consisting of:

polymethacrylates and derivatives,
polyaniline and derivatives,
polyphenylene and derivatives,
polyphenylene vinylene and derivatives,
polythiophene and derivatives,
copolymers of triphenyl diamine derivatives and trimethoxyvinylsilane,
poly(3,4-ethylenedioxythiophene: polystyrene sulfonic acid) (PEDOT: PSS),
polyacetylene and derivatives thereof,
polyparaphenylene and derivatives thereof,
polypyrrole and derivatives thereof,
polyparaphenylene sulfide and derivatives thereof,
polycarbazole and derivatives thereof,
polyisothianaphene and derivatives thereof,
poly(1,6-heptadiyne) and derivatives thereof, and
polyquinoline and derivatives thereof.

Claim 17 (Previously presented): An organic solar cell comprising the device according to claim 1.

Claim 18 (Previously presented): The device according to claim 2, wherein said first and/or said second electrode is a film or layer of a transparent material.

Claim 19 (Withdrawn): The device according to claim 2, wherein said first or second electrode is a metallic electrode.

Claim 20 (Previously presented): The device according to claim 2, wherein said first and/or said second electrode is coated with a layer of fluoride or acetate or a combination of fluoride and acetate.

Claim 21 (Previously presented): The device according to claim 2, further comprising a substrate coated with said first or said second electrode, wherein the substrate is one selected from the group consisting of a solid inorganic crystalline substrate, a glassy substrate, a metal foil substrate, a stainless steel foil substrate, and a polymer substrate.

Claim 22 (Previously presented): The device according to claim 18, further comprising a flexible polymer substrate coated with said first or said second electrode.

Claim 23 (Previously presented): A combination of the device according to claim 1 with a circuit, wherein the device acts as an internal power supply.

Claim 24 (Previously presented): A solar cell comprising the device according to claim 1.

Claim 25 (Withdrawn): A method of generating electricity from light, wherein a device according to claim 1 or a combination according to claim 23 is irradiated by light, whereupon a photo-initiated charge-separation process and subsequently a charge-transport process occurs, and wherein further electricity is recovered from said device or from said combination.

Claim 26 (Withdrawn): A method of producing the device according to claim 2, wherein the at least one organic hole conductor is directly grown on said carbon nanotubes (“overgrown nanotubes”).